

REMARKS

The Office Action dated August 19, 2003, has been received and carefully noted. The above Amendments and the following remarks are submitted as a full and complete response thereto.

By this Amendment, claim 26 has been amended. Claims 1-8 and 26-37 are pending and respectfully submitted for consideration.

The specification was objected to for listing references not in an Information Disclosure Statement. The Applicants submit herewith an IDS listing the references from the specification.

The Office Action was objected to the specification as containing references, which were not disclosed in an Information Disclosure Statement. The Applicants submit herewith an Information Disclosure Statement responsive to the objection.

The Office Action indicated that the Applicants' U.S. patent application serial number 09/964,644, which was published on April 4, 2002, was not disclosed in an Information Disclosure Statement, nor identified as a related application. The Applicants submit that the present application is the U.S. national phase application based on a PCT application. The international filing date for the PCT application is May 24, 2000, which precedes the filing date (September 28, 2001) of the present application and the priority date (September 29, 2000) of U.S. application serial number 09/964,644. Therefore, U.S. application serial number 09/964,644 is not a reference, and the Applicants do

not consider it necessary to file U.S. application serial number 09/964,644 in an Information Disclosure Statement.

Claims 1-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schulz (U.S. Patent No. 5,198,877) in view of Chan et al. (U.S. Patent No. 5,376,796, "Chan"). Schulz was cited for disclosing many of the claimed elements of the invention with the exception of a guide rail system. Chan was cited for curing this deficiency. The Applicant traverse the rejection and respectfully submit that the combination of Schulz and Chan fails to disclose or suggest the claimed features of the invention.

Schulz discloses a method and apparatus for three-dimensional non-contact shape sensing including two one-dimensional spot sensors or detectors 16, 18, and three pilot light emitters 20, 22 and 24. Three remotely located one-dimensional pilot light sensors 26, 28 and 30 are mounted in fixed, spaced-apart relation to each other and are located at known positions with respect to a predetermined reference coordinate system or frame 80. A coordinate computer 34, connected to control unit 32 by data line 54, calculates the three-dimensional spatial coordinates of the illuminated spot 36 in relation to the predetermined coordinate reference frame 80. The measurement system in Schulz is a two-stage measurement system, first measuring the location of the illuminated spot 36 in relation to the scanning head 12 at a particular instant in time, and then determining the position of the scanning head 12 in relation to the predetermined reference frame at that same instant in time.

Chan discloses a proximity detector for a body contouring system of a medical camera. Chan uses a gantry, which is a supporting structure that provides a mounting and alignment surface for elements in the device. A circular portion of the gantry structure 205 provides support for gamma camera detector 200 and a camera detector counterweight 201. The base of the gantry is located on tracks 250. Gantry structure 205 allows upper gamma camera detector 200 and lower counterweight 201 to pivot circularly around the patient when the patient is located on table 115.

With respect to claims 1-8, the Applicants respectfully submit that the combination of Schulz and Chan fails to disclose or suggest the claimed features of the invention. As acknowledged in the Office Action, Schulz fails to disclose a guide rail. Schulz also fails to disclose additional features of the invention beyond those acknowledged in the Office Action, as will be discussed below.

Claim 1 recites first position detection means for detecting the positions of the measuring head on the guide rail, using a predetermined position on the guide rail as a reference position, from the reference position, and a second position detecting means for detecting the position in a world coordinate system of the measuring head on the guide rail. In contrast, Schulz discloses measuring the location of the illuminated spot 36 in relation to the scanning head 12 at a particular instant in time and then determining the position of the scanning head 12 in relation to the predetermined reference frame at the same instant in time. As such, Schulz discloses determining the position of the scanning head only one time. Therefore, Schulz fails to disclose the first and second position

detecting means which both detect the position of the measuring head on the guide rail. The two-stage measurement system disclosed in Schulz, does not detect the position of the scanning head 12, twice, as does the position detecting means recited in claim 1. As such, Schulz fails to disclose additional features of the invention beyond those acknowledged in the Office Action.

The Applicants also submit that the Office Action has failed to establish a *prima facie* case of obviousness of claims 1-8 based on Schulz and Chan. Under U.S. patent practice, to establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings.

With respect to claims 1-8, there is no suggestion or motivation in the references to modify Schulz or to combine Schulz with Chan. The Office Action acknowledged that Schulz discloses a hand-held scanning head. Schulz further discloses that the object is to provide a three-dimensional optical mensuration system, which can quickly scan the surface of the object without the need for expensive, complicated and high precision mechanical positioning apparatus to position either the scanning head or the object to be scanned. In contrast, Chan discloses a gantry structure 205, which allows upper gamma camera detector 200 and lower counterweight 201 to pivot circularly around the patient when the patient is located on table 115. See Fig. 2 of Chan. The gantry structure in Chan is the expensive, complicated and high precision mechanical positioning apparatus that Schulz teaches away from. Therefore, one of ordinary skill in the

art would not look to Chan for modifying Schulz because Schulz specifically teaches away from Chan.

Furthermore, the proposed modification to Schulz suggested in the Office Action would change the principle of operation of Schulz. The combination of Schulz and Chan would require a substantial reconstruction and redesign of the elements shown in Schulz as well as a change in the basic principle under which the Schulz device was designed to operate. In particular, each of the elements recited in claim 1 is disclosed with respect to the guide rail. The bare teaching of a gantry in Chan is not sufficient to cure the deficiencies in Schulz with respect to the missing relationship of the guide rail to the claimed measuring head, first position detecting means, second position detecting means, means for storing, measurement means and means for converting the coordinates in the measuring head coordinate system of the measuring point of the object to be measured. Accordingly, the combination of Schulz and Chan fails to disclose or suggest each and every feature of the invention as recited in claim 1, and further, the combination of references is not sufficient to support a *prima facie* case of obviousness of claims 1-8.

Claims 26-37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schulz in view of Chan, further in view of Hirota et al. (U.S. Patent No. 6,064,749, "Hirota") and Barsai et al. (U.S. Patent No. 3,994,563, "Barsai"). Schulz and Chan were cited for disclosing many of the claimed elements of the invention with the exception of the position of the measuring head being located with respect to the reference coordinate system by a set of

stereo cameras. Hirota and Barsai were cited for curing this deficiency. The Applicants traverse the rejection and respectfully submit that claims 26-37 recite subject matter that is neither disclosed nor suggested by the cited prior art.

Hirota discloses a head mounted unit 28 including a head mounted display 20 with two cameras 22 and 24 rigidly attached to the head mounted display. The two cameras 22 and 24 are arranged so as to provide stereoscopic images to a graphics processor 30.

Barsai discloses a reflecting stereoscope with measuring device for the evaluation of stereophotographs. Barsai is based on the problem of providing an apparatus for the evaluation of stereographs, making it possible to determine the distance of an examined image point from the plane of the X-ray screen on the basis of the X-ray stereophotograph of a constant base or associated stereopairs of screen stereographs.

As a preliminary matter, the Applicants note that the Office Action cited Chan for teaching a guide rail. However, claims 26-37 do not recite a guide rail. Claims 26-37, recite different features of the invention. As such, the Applicants submit that the Chan reference does not provide any teaching that is relevant to claims 26-37.

With respect to claim 26, from which claims 27-34 depend, the Applicants submit that the combination of Schulz, Chan, Hirota and Barsai fails to disclose or suggest the claimed features of the invention. Claim 26 recites a mirror for reflecting the object to be measured is disposed on the measuring stand. In contrast, none of the references disclose this feature. Schulz discloses a planar

mirror 58, which could be optionally pivotally mounted and which directs beam 42 to a rotating many-faceted mirror 60, which directs or scans beam 42 over the surface 40 of the object 38 in a single plane relative to the scanner 12. As such, Schulz fails to disclose that either of the planar mirror 58 or many-faceted mirror 60 reflects the object to be measured or is disposed on a measuring stand, as Schulz does not disclose a measuring stand. Chan, Hirota and Barsai similarly fail to disclose or suggest at least a mirror for reflecting the object to be measured being disposed on the measuring stand. Accordingly, the combination of Schulz, Chan, Hirota and Barsai fails to disclose or suggest each and every feature of the invention as recited in claim 26.

With respect to claim 35, the Applicants respectfully submit that the combination of Schulz, Chan, Hirota and Barsai also fails to disclose or suggest the claimed features of the invention. Claims 36 and 37 depend from claim 35. Claim 35 recites a mirror for reflecting the object to be measured being disposed on the measuring stand. As discussed above with respect to claim 26, the combination of references fails to disclose or suggest this feature. Claim 35 further recites that the mirror comprises a light reflecting plate having a light reflective surface formed on its surface and a transparent plate formed on the light reflecting plate. In contrast, neither Schulz, Chan, Hirota nor Barsai disclose a mirror comprising a light reflecting plate having a light reflective surface formed on its surface and a transparent plate formed on the light reflecting plate. Barsai, for example, merely discloses optical elements 3, 3' provided with a partially light-permeable reflecting surface, the reflecting surface respectively projecting

the light beam emanating from the stereopairs mounted in the picture holders 2, 2' and being deflected by means of reflectors 4, 4' into the respective oculars 1, 1'. There is no disclosure or suggestion that the mirrors 4, 4' in Barsai have a light reflective surface formed on their surfaces and a transparent plate formed on the light reflecting plate. As such, Schulz, Chan, Hirota and Barsai fail to disclose or suggest each and every feature of the invention as recited in claim 35.

Under U.S. patent practice, the PTO has the burden under §103 to establish a *prima facie* case of obviousness. In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Both the case law of the Federal Circuit and the PTO itself have made clear that where a modification must be made to the prior art to reject or invalidate a claim under §103, there must be a showing of proper motivation to do so. The mere fact that a prior art reference could arguably be modified to meet the claim is insufficient to establish obviousness. The PTO can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. Id. In order to establish obviousness, there must be a suggestion or motivation in the reference to do so. See also In re Gordon, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (prior art could not be turned upside down without motivation to do so); In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1998); In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999); In re Lee, 277 F.3d 1338 (Fed. Cir. 2002). The Office Action restates the advantages of the present invention to justify the combination of references.

There is, however, nothing in the applied references to evidence the desirability of these advantages in the disclosed structure.

In view of the above, the Applicants respectfully submit that the Office Action has failed to establish a *prima facie* case of obviousness for purposes of a rejection of claims 1-8 and 26-37 under 35 U.S.C. §103.

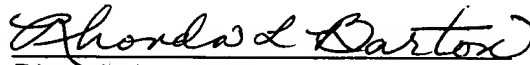
Claims 2-8 depend from claim1, claims 27-34 depend from claim 26 and claims 36 and 37 depend from claim 35. The Applicants respectfully submit that these dependent claims are allowable at least because of their dependency from allowable base claims 1, 26, and 35. Accordingly, the Applicants respectfully requests allowance of claims 1-8 and 26-37 and the prompt issuance of a Notice of Allowability.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an

extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing Attorney Dkt. No. 107314-00029.**

Respectfully submitted,



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Enclosure: Petition for Extension of Time (Three-months)